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Central Indiana Water Study: Indiana Finance Authority- Site locations

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Why Central Indiana was selected as the first IFA Pilot Project

- 1/3 of the state population lives in these counties
- There was a lot of existing streamgages on streams and reservoirs and wells to leverage for modeling purposes
 - All sites are sampled with the same methods and equipment
- Good collaboration across groups/agencies

NEXT STEPS:

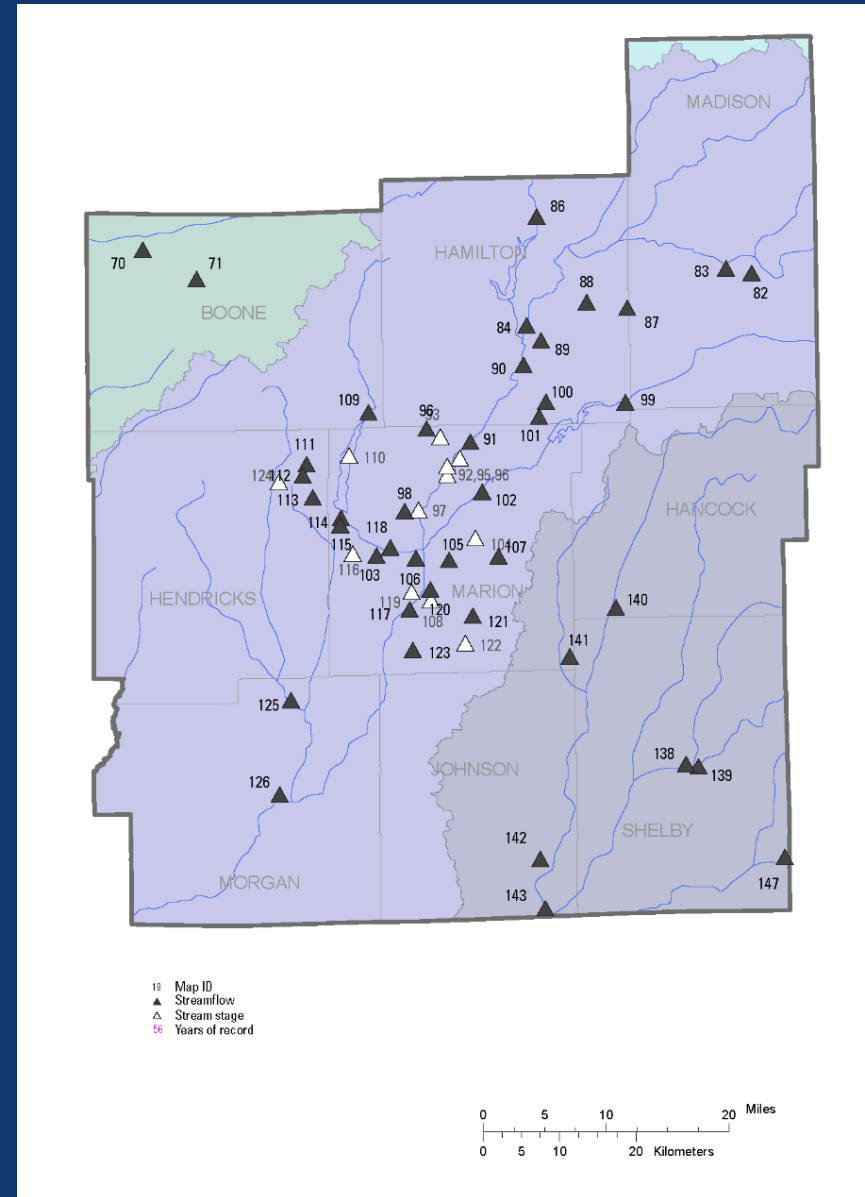
- Where do we need to add gages/wells?
- Where do we need to do ground water/surface water interaction to help understand the local hydrology?

60 Existing streamgages in the 9-county area

Lacking:

- **Streamgages:** in Boone, Hendricks, and Morgan
- **Reservoirs:** Morse and Geist

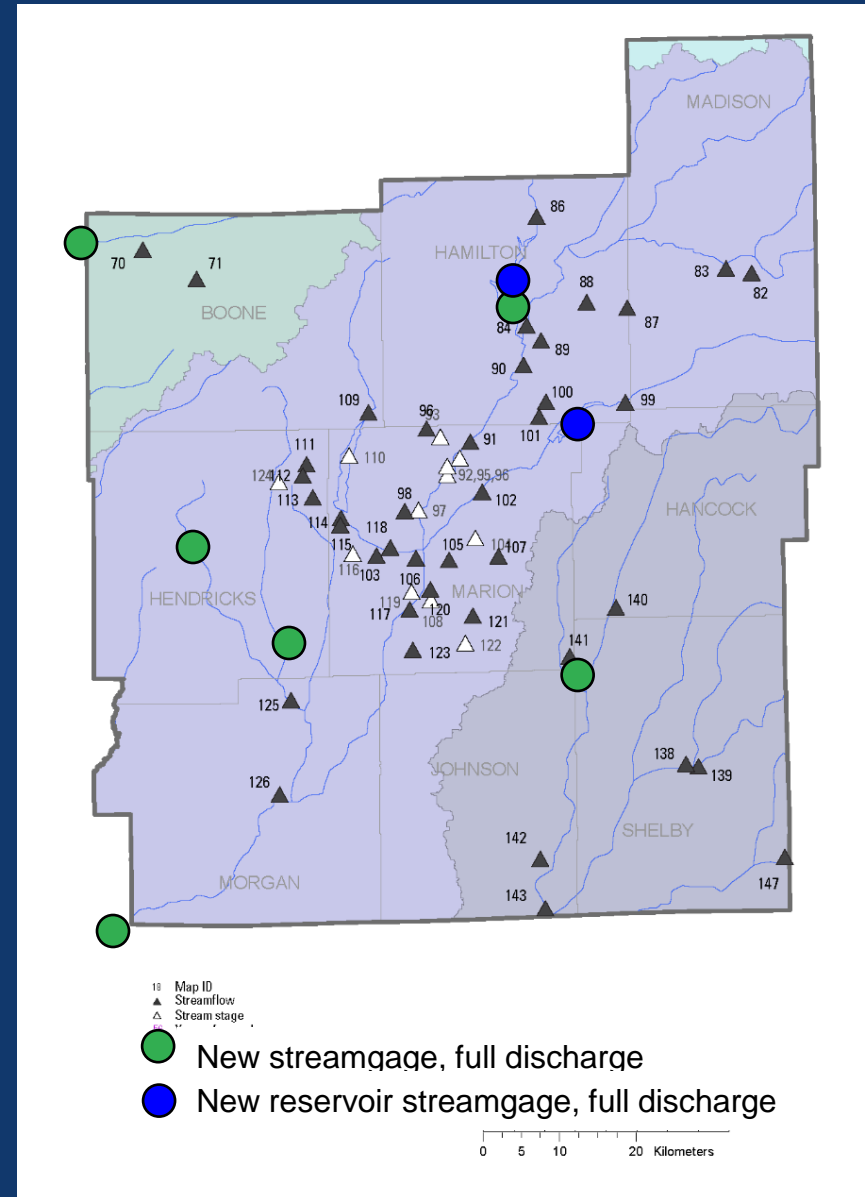
Watershed	Existing Streamgages		
	Discharge	Stage only	Total number
West Fork White	39	12	51
Crooked Creek			
Eagle Creek			
Fall Creek			
Pleasant Run			
East Fork White	7	0	7
Big Blue River			
Buck Creek			
Flatrock River			
Sugar Creek			
Upper Wabash	2	0	2
Total	48	12	60



8 New streamgages were added

- Spread wells around the study area
 - two on the study area boundary
- Two new reservoir sites

Watershed	Existing Streamgages		
	Discharge	Stage only	Total number
West Fork White	45	12	57
Crooked Creek			
Eagle Creek			
Fall Creek			
Pleasant Run			
East Fork White	8	0	8
Big Blue River			
Buck Creek			
Flatrock River			
Sugar Creek			
Upper Wabash	<u>3</u>	<u>0</u>	<u>3</u>
Total	48	12	68



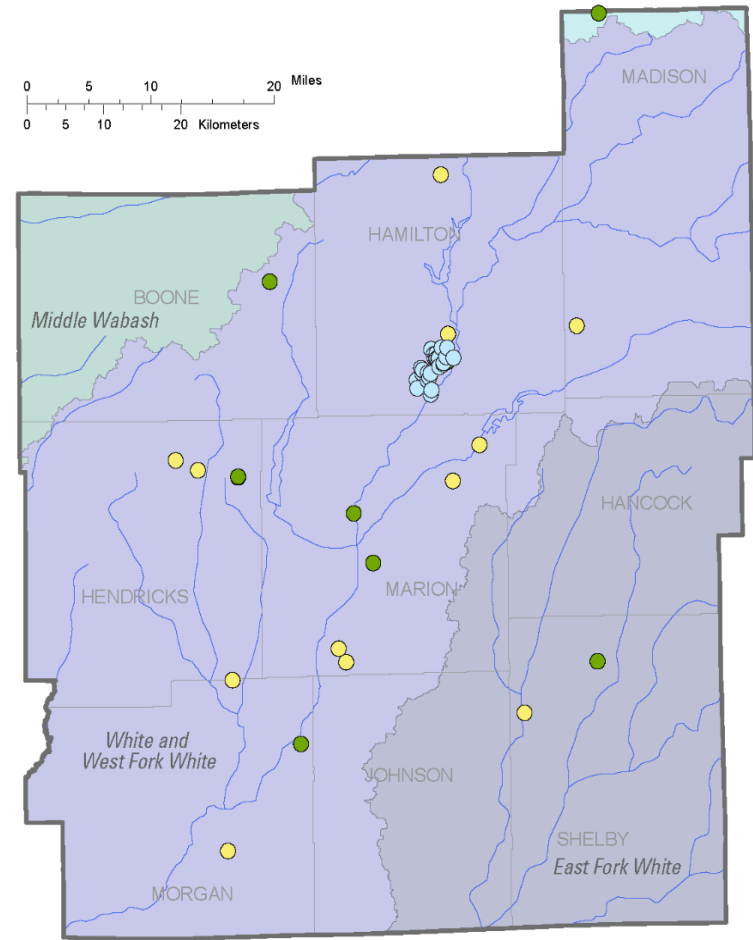
66 Existing wells to leverage for the study

Lacking:

- Most counties except Hamilton
- Strong well network in Carmel (35)

Existing monitoring wells

County	Real-time	Continuous	Periodic	Total number
Boone	1	0	1	2
Hamilton	1	2	34	37
Hancock	0	0	0	0
Hendricks	4	2	2	8
Johnson	0	0	0	0
Madison	0	1	1	2
Marion	2	2	3	7
Morgan	1	2	2	5
Shelby	1	1	3	5
Total	10	10	46	66



Explanation

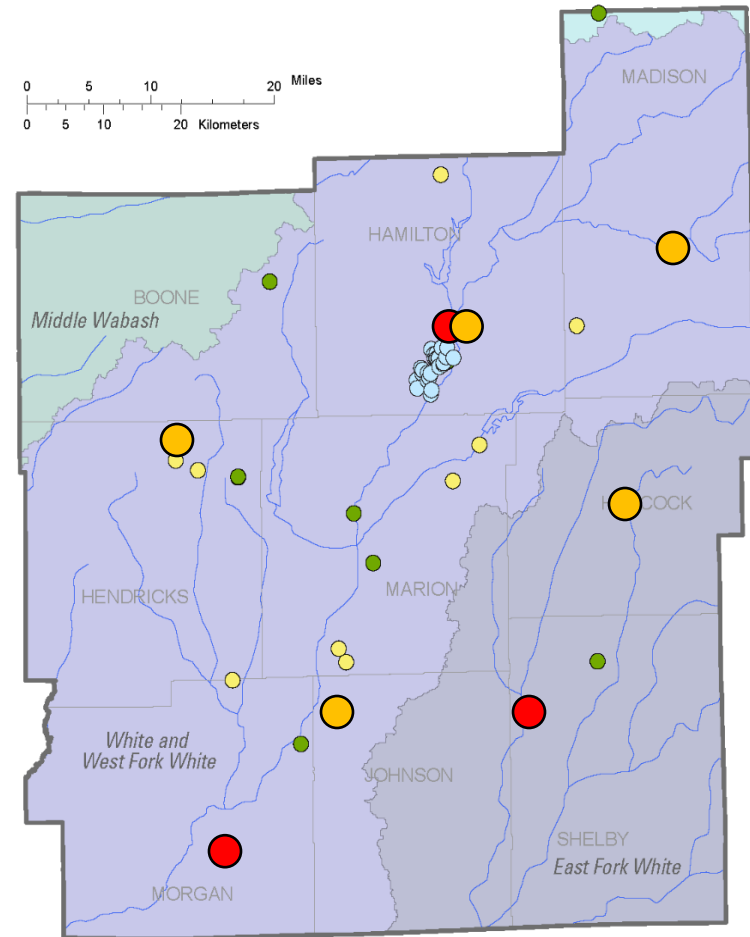
- Groundwater sites**
- Real-time monitor
 - Hamilton Co. periodic network
 - Volunteer Groundwater continuous network

8 New or upgraded wells added

- Spread wells around the study area
- Expanded the Volunteer Groundwater Network with IDNR

Existing monitoring wells

County	Real-time	Continuous	Periodic	Total number
Boone	1	0	1	2
Hamilton	3	1	32	36
Hancock	1	0	1	2
Hendricks	5	2	2	9
Johnson	1	0	0	1
Madison	1	2	1	4
Marion	2	3	2	7
Morgan	2	1	2	5
Shelby	2	0	3	5
Total	18	9	44	71



Explanation

Groundwater sites

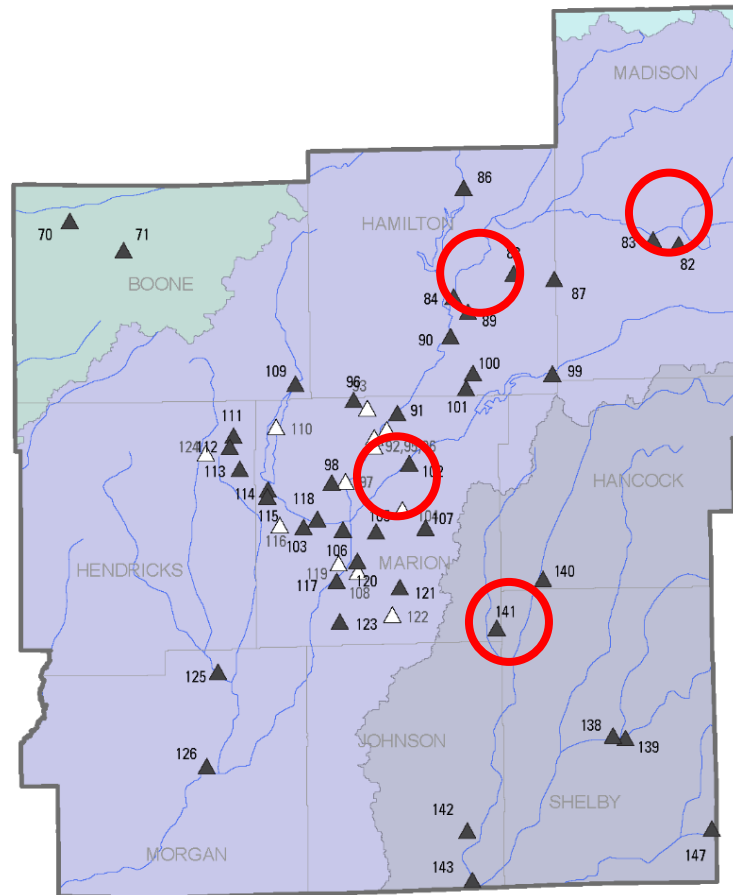
- Real-time monitor
- Hamilton Co. periodic network
- Volunteer Groundwater continuous network

- New monitoring well
- Upgraded monitoring well to real-time

GW/SW Interaction Synoptic

Groundwater discharges to streams (as baseflow)

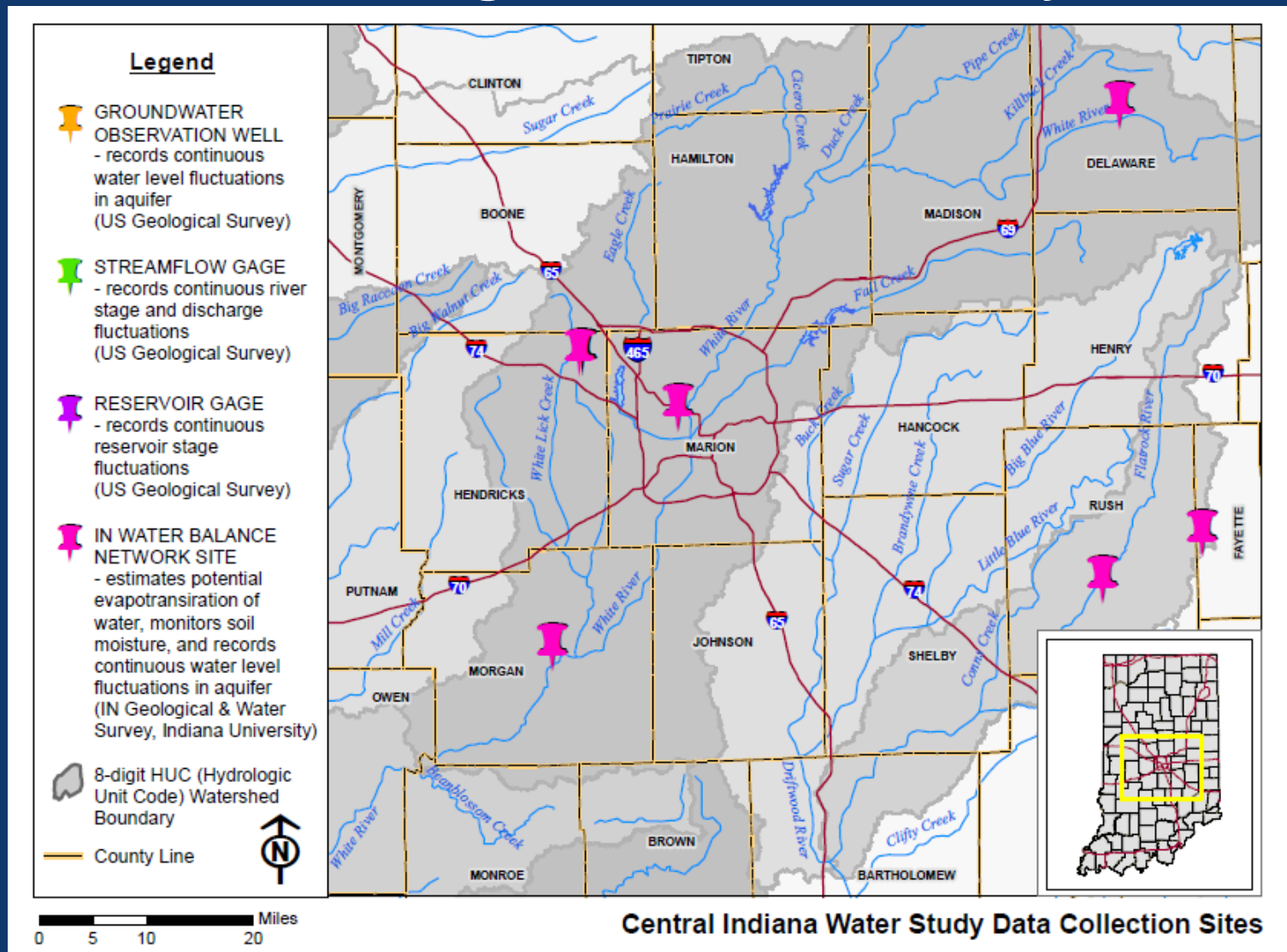
What is the contribution of groundwater on the ungaged streams?



18 Map ID
▲ Streamflow
△ Stream stage
56 Years of record

6 New IN Water Balance Network Sites

Indiana Geological and Water Survey, IU



Questions?



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